

Amendments to the Claims

Following is a complete listing of the claims pending in this application including any amendments:

1. (currently amended) A method for assaying an interaction between a test agent and a lipid bilayer-associated component, comprising:

providing a surface detector array device, ~~said device comprising~~

(i) a substrate having a surface defining a plurality of distinct bilayer-compatible surface regions separated by one or more bilayer barrier regions, said bilayer-compatible surface regions and said bilayer barrier regions being formed of different materials, and

(ii) a plurality of lipid bilayer expanses localized above said plurality of distinct bilayer-compatible surface regions, wherein said lipid bilayer expanses are localized above said surface regions in the absence of covalent linkages between said lipid bilayer expanses and said bilayer-compatible surface regions, and are separated therefrom by an aqueous film interposed between said bilayer-compatible surface regions and said corresponding lipid bilayer expanses, the lipid bilayer expanses having a component associated with the lipid bilayer expanse;

contacting said device with a bulk aqueous phase comprising ~~at the~~ test agent that specifically binds to the lipid bilayer-associated component, whereby the membrane fluidity of at least one of the plurality of lipid bilayer expanses decreases when said test agent binds to said lipid bilayer-associated component; and

evaluating the membrane fluidity of one or more of said lipid bilayer expanses, and

detecting binding of the test agent to the lipid bilayer-associated component by correlating a decrease in membrane fluidity to binding.

2. (previously presented) The method of claim 1, wherein the lipid bilayer-associated component is selected from a protein, a nucleic acid, a glycolipid, a lipopolysaccharide, a sterol, a lipid-linked molecule, and a fatty acid.

3. (previously presented) The method of claim 1, wherein the lipid bilayer-associated component is a bacterial endotoxin.

4. (currently amended) The method of claim 1, further comprising wherein ~~the lipid bilayer-associated component is a label associated with one or more of the lipid bilayer expanses.~~

5. (original) The method of claim 4, wherein said label is attached to a target membrane component.

6. (original) The method of claim 4, wherein said label is attached to a background membrane component.

7. (original) The method of claim 4, wherein said label is selected from the group consisting of a fluorophore, an electron spin resonance label, a radioactive label, a semiconductor nanoparticle label, and a metallic nanoparticle label.

8-9. (canceled)

10. (currently amended) The method of claim 1, wherein said evaluating the membrane fluidity comprises a method selected from the group consisting of fluorescence recovery after photobleaching, fluorescence anisotropy, fluorescence correlation spectroscopy, fluorescence resonance energy transfer, fluorescence resonance energy transfer microscopy, electrophoresis, and electrical molecular force microscopy.

11-25. (canceled)

26. (currently amended) A method for assaying an interaction between a test agent and a lipid bilayer-associated component, comprising:

providing a lipid bilayer expanse comprising a lipid bilayer-associated component; contacting said lipid bilayer expanse with a bulk aqueous phase comprising at the test agent that binds to said lipid bilayer-associated component; and

evaluating the membrane fluidity of said lipid bilayer expanse, wherein the membrane fluidity is affected when said test agent binds to the lipid bilayer-associated component,and

detecting binding of the test agent to the lipid bilayer-associated component  
by correlating a decrease in membrane fluidity to binding.

27. (previously presented) The method of claim 26, wherein said lipid bilayer-associated component is selected from the group consisting of a protein, a nucleic acid, a glycolipid, a lipopolysaccharide, a sterol, a lipid-linked molecule and a fatty acid.

28. (previously presented) The method of claim 26, wherein said lipid bilayer-associated component is a bacterial endotoxin.

29. (currently amended) The method of claim 26, further comprising wherein ~~said lipid bilayer-associated component is a label~~ associated with the lipid bilayer expanses.

30. (original) The method of claim 29, wherein said label is attached to a target membrane component.

31. (original) The method of claim 29, wherein said label is attached to a background membrane component.

32. (original) The method of claim 29, wherein said label is selected from the group consisting of a fluorophore, an electron spin resonance label, a

radioactive label, a semiconductor nanoparticle label, and a metallic nanoparticle label.

33. (original) The method of claim 26, wherein said membrane fluidity is evaluated using a method selected from the group consisting of fluorescence recovery after photobleaching, fluorescence anisotropy, fluorescence correlation spectroscopy, fluorescence resonance energy transfer, fluorescence resonance energy transfer microscopy, electrophoresis, and electrical molecular force microscopy.

34. (original) The method of claim 1, wherein the test agent is a small molecule.

35. (original) The method of claim 1, wherein the test agent is a protein.

36. (currently amended) The method of claim 1, wherein the test agent comprises a surface of a cell, a vesicle, a phantom cell, a plasma membrane vesicle~~a cell vesicle~~, a liposome, a giant vesicle, a lipid-covered glass bead, or a component of any thereof.

37. (original) The method of claim 26, wherein the test agent is a small molecule.

38. (original) The method of claim 26, wherein the test agent is a protein.

39. (currently amended) The method of claim 26, wherein the test agent comprises a surface of a cell, a vesicle, a phantom cell, a plasma membrane vesicle~~a cell vesicle~~, a liposome, a giant vesicle, a lipid-covered glass bead, or a component of any thereof.

40. (currently amended) The method of claim 1, wherein the bulk aqueous phase further comprises a second test agent, ~~said method and~~ further comprising determining whether said second test agent affects the interaction of the test agent with the lipid bilayer-associated component.

41. (original) The method of claim 26, wherein the bulk aqueous phase further comprises a second test agent, and further comprising determining whether said second test agent affects the interaction of the test agent with the lipid bilayer-associated component.

42. (new) The method of claim 1, wherein the test agent is an antibody.

43. (new) The method of claim 26, wherein the test agent is an antibody.